

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>				1. CONTRACT ID CODE		PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. <i>(If applicable)</i>	
6. ISSUED BY		CODE		7. ADMINISTERED BY <i>(If other than Item 6)</i>		CODE	
8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>				(X)		9A. AMENDMENT OF SOLICIATION NO.	
						9B. DATED <i>(SEE ITEM 11)</i>	
						10A. MODIFICATION OF CONTRACT/ORDER NO.	
						10B. DATED <i>(SEE ITEM 11)</i>	
CODE		FACILITY CODE					

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers
☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS.  
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

**E. IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return \_\_\_\_\_ copy to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>		16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
<i>(Signature of person authorized to sign)</i>		<i>(Signature of Contracting Officer)</i>	

**5. UNIT DESIGN - ARCHITECTURE. WITH AMEND 7 AND APPLICABLE PRECEDING AMENDMENTS**

5-1 Unit Design. The architectural work includes the design and construction of 156 housing units. 151 Junior Enlisted units, and 5 field grade officer family housing quarters are to be constructed. The dwelling units will be single story, three, four bedroom, and five bedroom single family, detached houses

5-2 These dwelling units shall convey a visual image consistent with White Sands Missile Range's design characteristic requirement and its physical organization. Dwellings shall be similar in finish material and style as shown in the Architectural Attachment, even though the size, shape, and configuration may be different.

5-3 Designs shall provide housing units as shown below in the Table 51, as provided in the Proposed Department of Defense Family Housing Size Standards by Grade chart and outlined in Public Law 92-214. Title 10 USC, Section 2826,

**TABLE 5-1**

Pay Grade	Number Of Bedrooms	Programming Benchmark Gross Floor Areas	
		Number of units	ft <sup>2</sup>
( FGO )	4	5	2,310
(JNCO)	5	11	2,300
	4	34	1,950
	3	106	1,630

5.3.1 Calculation of square footage is defined in American National Standard for Single-Family Residential Buildings ANSI Z 765, Gross Area Definition.

5.3.2 Net area definition. Net area is defined as the space inside the exterior and party walls. Net area excludes:

5-3.2.1 Exterior walls.

5-3.2.2 Half thickness of interior walls adjacent to excluded areas.

5-3.2.3 Utility and laundry rooms.

5-3.2.4 Interior bulk storage rooms.

5-3.2.5 Not used.

5-3.2.6 Furnace, domestic water heater, and solar equipment spaces.

5-3.2.7 Walls and interior spaces specifically designed for passive solar systems (other than required habitable areas).

5-3.2.8 Weather vestibules (not to exceed 16 ft<sup>2</sup>) sheltering the main entry.

5-3.2.9 Unfinished attic space.

5-3.2.10 Patios.

5-3.2.11 Garages.

5-3.2.12 Increases required to meet accessibility standards.

5-3.2.13 Open or screened porches without heating, air conditioning, or interior-type finishes. In localities subject to adverse weather conditions, such as wind-driven mist or noxious atmosphere, or both, open porches may be enclosed with appropriate fenestration or screening, or both, and not considered to increase the net area of the housing units, provided that air conditioning or heating, or both, is not added and the basic character of the enclosed area is still that of a porch.

5-3.3 Five percent of the dwelling units are to ADA accessible. Physical limitations may include any of several types of disabilities. The unit should anticipate a variety of conditions. Accessible housing units shall be designed in such a way that they may be easily and readily modified to accommodate physically challenged occupants, if necessary, at time of occupancy. This means required access clearances, room sizes, bathroom layout, kitchen layout, doors and hardware, grab bars, plumbing hookups, light switches and outlets, controls, and warning devices must meet requirements at time of construction. Readily modifiable means that requirements for adjustable height cabinets and work surfaces, plumbing fixtures, and the warning devices for the hearing and visually impaired can be made either at time of construction or at time of occupancy. **Provide space in design for ease in future ADA conversion, but no ADA equipment shall be provided in this contract. However, do provide blocking within walls and at the proper heights per ADA criteria for future accessory attachments/anchorage.**

5.4. Functionality. Rooms shall be sized and arranged for efficient use, good circulation, and furniture placement. The distribution of space for food preparation living and dining, sleeping, bathing, halls, closets, and services should be balanced and should enhance the intended functions. The master bedroom shall be isolated from the other bedrooms. The submitted floor plan shall pursue an open plan between the kitchen, family room and auxiliary dining area.

5-4.1 Habitable rooms shall not be used as halls for entry into a housing unit or for primary circulation within a housing unit.

5-4.2 Provide convenient access between garage and service area, and between kitchen and service area.

5-4.3 Do not use a sliding glass door as a primary housing unit access.

5-5 Indoor and Outdoor Integration. Emphasize factors that enhance indoor and outdoor living. Consider size, layout and location of patios, outside trash screen walls, HVAC screen walls, and yards, and features that encourage family use of outdoor areas.

5-6 Fire Protection and Safety. Housing units will comply with the applicable National Fire Codes, including NFPA 101, Life Safety Code and the UFC 3600-01, Fire Protection Engineering for facilities. Construction features will be provided in accordance with the International Building Code (IBC).

5-6.1 Fire resistance of walls and roof material. Walls separating living units from exterior bulk storage shall be of U.L. design for 1-hour fire rating partitions and shall have a UL design for 1 hour fire rating ceiling, as a single design assembly. Penetrations in the fire rated partitions shall maintain the rated integrity. This requirement shall be in addition to any code requirements. Provide fire stops at floor, and ceiling or roof line. Provide Class A (ASTM E108, Standard Methods of Fire Tests of Roof Coverings) roof covering material throughout.

5-6.2 Not used

5-6.3 Heater rooms. Rooms equipped with fuel-fired equipment such as boiler rooms, furnace rooms, and rooms with fuel-fired water heaters shall be separated by one-hour fire-rated construction. Direct access to these rooms from the exterior is required.

5-6.4 Alarm systems. Smoke detectors which are located within the housing unit and which sound an alarm only within the housing unit are not required to be transmitted to the installation fire department.

5-7 Sound Attenuation.

5-7.1 Testing. Certified proof-of-performance field tests will be conducted to demonstrate that the floor and wall systems as constructed provide the required sound isolation. Tests for air-borne sound shall be made in compliance with ASTM E336. Tests for impact sound shall be made in compliance with ASTM E1007. Testing of 10 percent (minimum) of each type of floor and wall system is required. Location of test sites will be chosen at random by the Government. Tests will be conducted with the contacting officer in attendance.

5-7.1.1 Any wall or floor system found to be inadequate shall have the deficiencies corrected and the additional qualifying tests conducted at the Contractor's expense. Testing at the Contractor's expense of greater than 10 percent of each system may be required if the Contracting Officer determines that the quality of construction requires this additional testing.

5-7.1.2 Walls and ceiling systems shall be designed to meet or exceed the requirements stated below. In cases where the field tested performance of the systems does not meet the designed performance, the maximum acceptable difference between field tests and sound transmission ratings shall be 2 decibels (dB) for airborne sound ratings and 5 dB for impact sound ratings.

5-7.1.3 Walls and ceiling construction shall be designed to provide the minimum airborne sound transmission ratings and impact isolation ratings stated in Table 5-2.

**TABLE 5-2 - SOUND TRANSMISSION STANDARDS  
FOR WALLS, FLOORS AND CEILING CONSTRUCTION**

Area	FSTC <sup>1</sup>	FIIC <sup>2</sup>
Primary Habitable Areas (Living, Dining, Family Room, Bedrooms, Circulation)	38	65
Habitable Wet Areas (Kitchen, Bath, Utility, Laundry, Equipment)	38	57

Note<sup>1</sup>: Field Sound Transmission Class. See ASTM E336.

Note<sup>2</sup>: Field Impact Isolation Class. See ASTM E1007.

5.7.2 Floor construction. Floor construction shall be designed to provide the minimum FSTC and FIIC ratings stated in Table 5-2. Materials used to obtain the required sound attenuation for the floor construction shall not be liquid-soluble or softened by moisture. Sound insulation shall have a flame-spread rating of 25 or less and a

smoke development rating of 50 or less when tested in accordance with ASTM E84.

### 5.7.3 Not Used

5.7.4 Plumbing and HVAC equipment. Design of plumbing and Heating, Ventilating, Air-Conditioning (HVAC), and dehumidifying equipment shall include design provisions such as location, enclosure and acoustical treatment, to minimize transmission of noise generated by equipment within each housing unit and to eliminate transmission of noise to other housing units.

5-8 **AMEND #7** Dimensions and Areas. Minimum areas and dimensions for interior spaces are shown in Table 5-3. **Square footage of bedrooms shall be calculated to not include closet space in the following areas. Closet space shall be calculated in addition to the minimum bedroom space.** Minimum areas and dimensions for exterior spaces are shown in Table 5-4.

**TABLE 5-3 - MINIMUM AREAS AND DIMENSIONS - INTERIOR SPACES**

Space	Area	Length	Width/Depth	Height <sup>1</sup>
	ft <sup>2</sup>	ft-in	ft-in	ft-in
Living <sup>2</sup>	150	11-8	11-8	9-0
Dining (3 BR) <sup>2</sup>	120	9-6	9-6	9-0
Dining (4/5 BR) <sup>2</sup>	120	10-6	10-6	9-0
Family Room <sup>2</sup>	100	9-6	9-6	9-0
Kitchen <sup>3,6</sup>	72	8-0	8-0	9-0
Eating in Kit. <sup>4</sup>	80	8-6	8-6	9-0
Refrigerator & Freezer	14	3-0	3-0	9-0
Washer/Dryer <sup>5</sup>	20	6-0	3-0	9-0
BR #1	150	11-8	11-8	9-0
BR #2	120	10-0	10-0	9-0
BR #3	120	10-0	10-0	9-0
BR #4/5	120	10-0	10-0	9-0
Equipment Room <sup>8</sup>	-	-	-	9-0
Full Bath <sup>6</sup>	-	-	6-0	9-0
Vestibule	16	4-0	5-0	9-0
Hall	-	-	3-3	9-0

**TABLE 5-3 - MINIMUM AREAS AND DIMENSIONS - INTERIOR SPACES**

Space	Area	Length	Width/Depth	Height <sup>1</sup>
	ft <sup>2</sup>	ft-in	ft-in	ft-in

Note<sup>1</sup>: Ceiling heights in habitable rooms shall be a minimum of 9 feet.

Note<sup>2</sup>: Room dimensions are exclusive of circulation. Circulation paths along one side of a room are permitted but add 3 ft-3 inches to the minimum dimension.

Note<sup>3</sup>: A minimum of 4 ft must be maintained in front of and between cabinets.

Note<sup>4</sup>: Minimum area and dimensions are measured from face of cabinets to walls.

Note<sup>5</sup>: Minimum area and dimensions are indicated for a washer and dryer closet. This area shall be provided in a utility room. When so provided, area and dimensions are exclusive of circulation.

Note<sup>6</sup>: Accessible units must conform to UFAS. UFAS requires greater minimum dimensions.

Note<sup>7</sup>: Not Used

Note<sup>8</sup>: The length and width/depth shall accommodate the equipment installed and any required area to access and maintain the equipment.

**TABLE 5-4 - MINIMUM AREAS AND DIMENSIONS - EXTERIOR SPACES**

Spaces	Area	Length	Width/Depth	Height <sup>1</sup>
	ft <sup>2</sup>	ft-in	ft-in	ft-in
Garage (two-car)	420	21-8	20-0	9-0
Covered Patio - 3 BR	144	6-0	10-0	9-0
Covered Patio - 4 BR	180	6-0	10-0	9-0
Covered Patio - 5 BR	180	6-0	12-0	9-0

Note<sup>1</sup>: Ceiling heights apply when patios and balconies are covered.

5-8.1 Minimum area requirements for kitchen cabinets, counters, and pantries are shown in Table 5-5. Flat area is shown for countertops and drawers. Combined shelf area is shown for pantry and base, wall and wall cabinets.

**TABLE 5-5 - KITCHEN CABINET, COUNTER, & PANTRY AREA**

Type of Housing Unit	Wall	Base	Drawer	Counter	Pantry
	ft <sub>2</sub>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>
JNCO/FGO 4/5 BR	40	50	20	20	20
JNCO/FGO 3 BR	30	40	18	16	16

5-8.2 Minimum closet width requirements are stated in Table 5-6.

**TABLE 5-6 – MINIMUM CLOSET WIDTHS<sup>1</sup>**

Type of Unit	FGO/SO	JNCO
	ft	ft
Coat/ Entry Hall	4	4
Master <sup>2</sup> BR #1	8	8
BR #2	6	6
BR #3	6	6
BR #4/5	6	6
Broom	3	3
Linen <sup>3</sup>	3	3

Note<sup>1</sup>: Minimum inside clear depth for standard/broom closets shall be 2ft

Note<sup>2</sup>: Walk-in closet is preferred.

Note<sup>3</sup>: Minimum clear inside depth for linen closets shall be 1ft-6inches.

5-8.3 Minimum requirements for interior bulk storage are shown in Table 5-7.

**TABLE 5-7 – MINIMUM INTERIOR & GARAGE BULK STORAGE**

Type of Unit	Type of Storage	FGO	JNCO
		FT <sup>2</sup>	FT <sup>2</sup>
3 BR	Int.	-	40
	Garage	-	36
4 BR	Int.	47	45
	Garage	45	40
5 BR	Int.	-	47
	Garage	-	45

5-9 Major Zones. Living and Dining, Kitchen and Auxiliary Dining Area, Family Room, and Bedrooms.

5-9.1 Living and dining. The living room should have direct access to the front entrance foyer and to the dining area without passing through another room. When circulation is required along the perimeter of the space or between areas in open plans, minimum circulation space of 3ft-3inches shall be added to the required minimum room dimension.

5-9.1.1 The dining area may be an extension of, or an "L" off the living room.

5-9.1.2. The dining area shall be directly accessible from the kitchen without passing through another room.

5-9.2 Kitchen and auxiliary dining area.

5-9.2.1 The kitchen shall provide an efficient work triangle. A base cabinet, minimum 15 inches wide, shall be provided on the handle side of the refrigerator. The range shall not be located adjacent to the refrigerator, in a corner, or adjacent to a passageway. The dishwasher shall be installed adjacent to the kitchen sink. Provide a backsplash behind the range, extending to the underside of the range hood, finished to match the countertop or range and the range hood. Space for a tenant-owned upright freezer shall be provided adjacent to the kitchen in the utility room or garage. Space for a tenant-owned microwave oven shall be provided in the kitchen by way of a microwave cabinet.

5-9.2.2 Provide auxiliary dining areas in the form of table space in the kitchen or in a family room adjacent to, or as an extension of, the kitchen. The auxiliary dining area shall not be located in the living or dining rooms.

5-9.2.3 In the kitchen, shoe molding (1/4 round) is required at all base cabinets where they meet the floor surface.

5-9.3 Family room. Provide a separate family room, adjacent to and contiguous with the kitchen, for all three-, four, and five-bedroom units.

5-9.4 Bedrooms. Bedrooms shall be designed to accommodate king-size beds in master bedrooms and full beds in the other bedrooms. Window, door, and closet placement should enhance furnishability. Each bedroom shall be accessible without passing through another bedroom.

5-10 Minor Zones. Bathrooms, Laundry, Closets, and Bulk Storage rooms.

5-10.1 Bathrooms. Emphasis shall be placed on size, furnishings, layout, and privacy. Direct access to a bathroom from the master bedroom is required for three-, four-, and five-bedroom units. Compartmented bath design, for family and guest use. Determine the number of bathrooms based on Table 5-8.

**TABLE 5-8 - BATHROOM REQUIREMENTS**

Number of Bedrooms per Floor	Number of Bathrooms Per Floor
3 - 5	2

5-10.1.1 A full bath shall contain a water closet, lavatory, a tub with shower assembly. One full bath in each housing unit shall include a tub with shower assembly and shall be directly accessible from the bedroom hall without passing through another room. Tubs with shower assemblies, shall include curtain rods with curtain rings.

5-10.1.2 Provide lavatories mounted in 3-ft wide (minimum) countertops, with vanity bases. Countertops shall be homogeneous, non-porous, solid surface type materials, with minimum 4 inches high back splashes. Maximize vanity storage space.



5-10.1.3 Bathroom accessories may be surface mounted or recessed, of non-corrodible metal or ceramic tile, and shall include a toilet paper holder, soap dish (at sink and at tub/shower), toothbrush and tumbler holder, and grab bar at tub or shower stall, bathrobe hook, and towel bars totaling not less than 42 inches for a full bath. This does not describe ADA type grab bars.

5-10.1.4 A mirror glass above the vanity and a recessed medicine cabinet shall be provided in each bathroom. Cabinets shall be corrosion-resistant with plate glass mirrors, sliding or hinged door type.

5-10.1.5 Tubs and showers shall not be placed under windows.

5-10.1.6 Exhaust shall be provided in all baths. They shall be ducted directly to the exterior of the roof, and shall be a part of an engineered ventilation system (See paragraph 10).

5-10.1.7 Each bathroom in each unit shall have one tube-type solar skylight, minimum 10" diameter. Skylight shall be equal to that manufactured by Solatube, 2210 Oakridge Way, Vista, CA 90283-8341, and having the following salient features:

- a) high impact polycarbonate dome to block harmful UV rays, and be resistant to debris impacts from high winds
- b) interior tube surface to be 95% light reflective
- c) flexible tube design to bypass attic obstacles
- d) water, bug, and dust leak proof seamless flashings
- e) minimal heat gain and loss
- f) 10-year warranty against breakage and yellowing.

5-10.2 Laundry. Washer and dryer space shall be provided in a utility room, not in an enclosed recess off the hall.

5-10.2.1 A minimum of two full-length shelves, 10 inches minimum nominal depth, shall be provided above the washer and dryer.

5-10.2.2 Minimum net clear door width to washer and dryer in utility room shall be 3ft 2inches. Doors shall be either undercut or louvered to provide adequate make-up air for the dryer in accordance with typical household.

5-10.3 Closets. Closets shall provide the minimum widths indicated in Table 5-6. A broom closet shall be provided convenient to the kitchen, and a coat closet shall be located convenient to the housing unit entrance.

5-10.3.1 Closet shelving. Closets (except linen closets) shall be equipped with a 18 inches deep shelf and a clothes hanger rod. Linen closets shall be provided with at least four full-depth shelves. Closet shelving and rods in excess of 4ft shall have center supports. Shelves and supports shall be capable of carrying 35 lbs/ft. Closet shelving shall be minimum 3/4 inch thick solid wood, plywood, or high density particle board. Shelving shall be finished with high-pressure laminated plastic. Factory finished welded wire shelving shall not be used.

5-10.3.2 Closet doors. Closet doors should be located to permit placement of furniture in the corners of the rooms by providing a 18-inch] return adjacent to a furnishable wall. Closets 6 ft or more in width shall have sliding doors, maximum 6 ft-8 inches high. Wall closet width shall not extend beyond either door jamb more than 20 inches. Wardrobe closet doors (sliding and bi-fold) shall be provided with both top and bottom door tracks. Accordion doors are not permitted.

5-10.4 Bulk storage rooms. Provide each housing unit with interior storage rooms meeting the minimum requirements of Table 5-7. Provide interior storage in separate rooms. Provide storage rooms in the garage of the housing unit with access from the interior of the garage.

5-10.4.1 Utility room. The utility room shall contain a utility sink. The utility room should be located adjacent to the rear entrance. A hose bib shall be located near the rear entrance at a hardstand. Hardstand shall be 2' x

2' x 4" concrete slab.

5-10.4.2 Bulk storage rooms should be at least 4 ft in depth and a minimum clear height of 6 ft-6 inches.

5-10.4.3 Provide a minimum of three nominally 12 inches deep shelves with a combined length of 24 ft within each bulk storage rooms.

5-10.4.4 Common walls and ceilings between adjacent storage areas shall be finished on both sides.

5-10.4.5 The equipment room shall contain heating and cooling systems equipment. The equipment room shall be accessible from the exterior. Consideration should be given to design accessibility to the equipment room by maintenance personnel, with the yard fence in place. There shall be a lighted dry covered flat surface for maintenance personnel to work. The HVAC filters are to be accessible from within the dwelling.

## 5-11 Interior Finishes

5-11.1 Provide three interior color/finish schemes.

5-11.2 Walls and ceilings. Provide 5/8 inch gypsum wallboard, taped and textured with orange peel finish. Water-resistant wallboard shall be used in wet areas such as bath, powder, and laundry rooms. Provide Type "X" gypsum board where required for fire-rating and /or acoustical treatments (STC-Sound Transmission Class rating). Cementitious backer board shall be used for ceramic tile applications. An orange peel ceiling and wall texture with semi-gloss enamel finish shall be provided in all rooms. Interior finish shall have a flame-spread rating of 25 or less and a smoke-developed rating of 50 or less when tested in accordance with ASTM E84. Clear acrylic corner guards may be used to protect corners. Wallpaper shall not be used.

5-11.3 Kitchen and eating area walls and ceiling. Combined kitchen and eating rooms shall have the same type of wall and ceiling finishes.

5-11.4 Flooring and base. Front entry, kitchen, auxiliary dining area laundry, and utility flooring shall be ceramic tile with wood base. Bathrooms and halls shall be ceramic tile flooring and base. The bedrooms, and living room shall be carpeted with wood base. Wood flooring or a factory-made, pre-finished wood plank flooring with wood base in the living-dining area is required. This material identification is not justification to exceed the mandatory price limitation set forth in this solicitation. Vinyl terminations and transitions strips are prohibited.

5-11.4.1 Ceramic tile shall conform to ANSI 137.1, moderate or heavy grade.

5-11.4.2 Carpet shall be installed in the stretch method over carpet pad utilizing tackless strips in accordance with CRI-104. Carpet shall meet the following criteria:

5-11.4.2.1 Properties: Tufted construction, 100 percent branded continuous filament nylon or polyethylene terephthalate, soil hiding, multi-colored, loop or cut pile, 1/8 gauge, yarn weight 28 ounces per square yard, total weight grams per square meter 60 ounces per square yard, 5000 minimum density, synthetic primary and secondary backing.

5-11.4.2.2 Tuft bind for tufted carpet shall meet a minimum of 10 pounds when tested in accordance with ASTM D1335, 1967; R-1972

5-11.4.2.3 Carpet shall meet requirements of 16 CFR 1630 and have a minimum average critical flux of .45 watts per square centimeter when tested in accordance with ASTM E648.

5-11.4.2.4 Ten-year warranty from the carpet manufacturer against edge ravel, delamination, and tuft bind is required.

5-11.4.2.5 Carpet pad shall be 5/8 inch bonded urethane, minimum 8-pound density. Urethane pad will conform to ASTM.D.3676.

5-11.4.2.6 Carpet edging shall be 1-1/2-inch minimum width floor flange and minimum 5/8-inch wide face.

5-11.4.2.7 Tackless strip for stretch-in installation over carpet pad shall be exterior grade Douglas Fir plywood, with minimum dimensions of 1-1/8-inch wide suitable for the cushion thickness specified. Tackless strips with two or three rows of staggered pins shall be used. For areas over 20 ft long, tackless strip with three rows of pins shall be used. Pins of the proper length shall be provided to penetrate through carpet backing, but shall not be a safety hazard.

5-11.4.2.8 Carpet containing recovered material is designated in 40 CFR 247.12 as an affirmative procurement item. Products containing recovered material will be provided when price, performance, and availability meet project requirements. Various nylon and polyethylene terephthalate carpet offer the opportunity to meet this requirement.

5-11.5 Painting. Primers, paints, and stains shall meet or exceed the requirements of Corps of Engineers Unified Facilities Specification 09900. Finishes shall be lead free and scrub able. Walls and ceilings in kitchen, baths, laundry, utility rooms, and all painted trim shall be painted with semi-gloss enamel. Colors shall be submitted by the Contractor and approved by the Contracting Officer. Blown-on acoustical finish is prohibited. Orange peel finish on gypsum walls and ceilings shall be used.

5-12 . Garages. Provide a double car garage for each housing unit. Bulk storage room is included in the garage, such room is in addition to the required car storage area. Provide the bulk storage room in the garage, in addition to the required car storage room. Refer to Table 5-4 and 5-7 for minimum dimensions. Set the garage slab elevation a minimum of 4 inches below the level of the housing unit floor. Slope slabs to drain out the garage door. Garage doors shall have hardware that can be opened and locked from inside and outside of the garage. Provision of a two-car garage with two 9 feet wide doors shall be provided for each housing unit. Each door shall be provided with a garage door opener. Garage exterior and interior walls shall be insulated to a minimum of R-19. The garage ceiling shall be insulated to R-30. The garage doors and floor shall be insulated to R-5

5-13 Roofing and Drainage. Roofs are to maintain a 5:12 slope.

5-13.1 Roof water. Gutters and downspouts shall be provided for all roof areas. The gutter system should minimize maintenance. The Design should prevent water run-off onto porous materials. Downspouts draining onto a lower roof shall have metal splash deflectors. Concrete splash blocks shall be provided under downspouts if not connected to the storm drainage system.

5-13.2 Roof surface. Emphasis shall be placed on low maintenance and durability of roof material. The number of roof penetrations shall be minimized. Metal roofing shall be an architectural simulated-clay metal tile roof panel system, matching the appearance of Spanish clay roof tile. Roof construction shall conforming to UL 580 class 90 Wind Uplift, Construction Number 533 over 5/8" plywood deck, UL 790, Class A Fire Resistance Rating, and UL 2218, Class 4 Impact Resistance. Roof Panels shall be a minimum standard of 24 Gauge and applied over a plywood substrate with 30 pound felt underlayment. Finish shall meet both KYNAR 500 (PVF2) and HYLAR 5000 Specifications.

5-14 Exterior Finishes. Emphasis shall be placed on low maintenance and durability for exterior finish materials. Materials shall be residential in size, scale, and texture. Finishes shall be earth tone in color. The following siding materials may be used, they are listed in declining order of preference:

5-14.1 Autoclaved Aerated Concrete (AAC). Units shall be steel reinforced, load bearing, pre-cast wall panels as manufactured by Texas Contec, Inc or approved equal. Erected panels shall be coated on the exterior/exposed face with a base and finish coat of stucco finish, per AAC manufacturer's recommendation. Contractor shall follow manufacturer's installation instructions explicitly and shall certify accurate and correct

installation of all AAC type materials.

5-14.2 Stucco. Portland cement plaster or synthetic stucco shall have integral color. Stucco total surface area shall be divided into panels with control joints spaced no more than 10 ft apart to form a panel of less than 150 ft<sup>2</sup>. Contractor shall follow manufacturer's installation instructions explicitly and shall certify accurate and correct installation of all stucco type materials.

5-14.3 Exterior Insulation and Finish System (EIFS). EIFS may be used if high quality materials and installation checks are used. A drainable-substrate EIFS system shall be used. Provide a complete secondary weather barrier with a water-shedding drainage plane and flashings. Provide sealed isolation joints around all penetrations. Provide pan flashing at windows. Use wet-mix base coats. Use 6-ounce or heavier mesh. Use high-impact mesh at the ground level and in traffic areas. Use silicone sealants for joints. Contractor shall follow manufacturer's installation instructions explicitly and shall certify accurate and correct installation of all EIFS type materials.

5-14.4 and 5-14.5 Not Used.

5-14.6 Trim elements. Aluminum or vinyl clad wood trim is preferred. Painted exterior surfaces shall be minimized. When exterior exposed wood trim is used, the following requirements apply:

5-14.6.1 Exposed wood, such as window trim, door sills, window sills, railings and balusters, wood fencing, solar shading devices including louvers, arbors, and trellis shall be treated for rot resistance in accordance with NWWDA Industry Standards I.S.4, Water Repellant Preservative Treatment for Millwork.

5-14.6.2 Exterior surfaces requiring painting shall receive a minimum of one prime coat and two finish coats of paint. Wood trim frames, etc., shall be back primed. Exterior semi-transparent stains, two coats, are acceptable, where appropriate for wood, plywood, etc.

5-14.6.3 Flag mounting brackets shall be installed to accommodate a ¾" to 1" flag pole. The mounting bracket will be installed on the front side of the house at a convenient location for use.

5-14.7 Exterior ceilings and soffits. Exposure of roof framing and underside of roof/floor decks are not permitted. Exterior ceilings and soffits will be trimmed or otherwise architecturally treated and be coordinated in color to exterior wall color with Kynar 500 finish. Exterior ceilings and/or soffits may be pre-finished metal panels, minimum of 24 gauge. All panels shall be perforated (ventilated), except the ceiling over the porches/patios, which shall be solid panels.

5-14.7.1 Refer to 4-11.1 for installation of metal mounting brackets for small satellite dishes. Reference chapter four section 11 for specific mounting instructions.

5-14.7.2 The residents will furnish their own satellite dishes. One mounting bracket for each single-family living unit shall be installed. The dishes shall have an unobstructed path so as to achieve clear signals. The brackets are to be located on the rear elevation or one of the side elevations: whichever gives a clear unobstructed signal. The brackets are not to be located on the front elevation of any of the units.

5-14.8 Patios. Patios shall be sloped to drain away from the dwelling units and have a broom-finished concrete floor surface.

5-14.9 Porches and stoops shall be sloped to drain away from the unit and have a concrete floor surface which provides a waterproof and non-slip surface. Plastic coating or films over concrete decks are not acceptable. Exposed wood decks, stained or painted, are not acceptable. Exposed rails and trim shall be iron bar stock, painted with rust inhibiting black paint.

5-15 Glazed Openings. Windows and glazed door (50 percent or more glass) units shall meet the following

standards and must be certified by an independent testing laboratory. Windows that slide (double-hung, single-hung, and horizontal sliding) and glass exterior doors shall meet the standards for hung units. Standards for casement windows shall apply to all hinged or fixed windows. Bronze anodized aluminum windows shall be provided. The Contractor shall provide the manufacturer's certification that the window provided meets the following test requirements:

5-15.1 Required tests. Hung units will meet a National Fenestration Rating Council (NFRC) design pressure rating of 25. Casement windows will meet NFRC design pressure rating of 40. Evidence of passing the following specific tests and minimum standards are required to achieve these design pressure standards.

5-15.1.1 Structural testing. Using ASTM E330 test results shall demonstrate no glass breakage, damage to hardware, or permanent deformation that would cause any malfunction or impair the operation of the unit. Residual deflection of any member shall not exceed 0.4 percent of its span. Hung windows shall be tested at pressures of 37.5 lb/ft<sup>2</sup>, and casement windows shall be tested at pressures of 60.0 lb/ft<sup>2</sup>.

5-15.1.2 Operating force. The force necessary to unlatch and open units shall not exceed 20 lb for hung units and 25 lb for casements.

5-15.1.3 Air infiltration. Using ASTM E283 leakage rate shall not exceed 0.25 ft<sup>3</sup>/min/ft<sup>2</sup> for hung units and 0.15 ft<sup>3</sup>/min/ft<sup>2</sup> for casements, at a test pressure of 1.57 lb/ft<sup>2</sup>.

5-15.1.4 Water penetration. Using ASTM E547, no leakage shall be evident when tested in three, five-minute cycles with a one-minute rest period between cycles at 3.75 lb/ft<sup>2</sup> for hung units and 6.0 lb/ft<sup>2</sup> for casements.

5-15.1.5 U-Value. Whole window U-values shall comply with Table 7-1 U-values shall be calculated using ASTM E1423 and NFRC 100-91.

5-15.2 Glazed doors. Glazed doors shall have insulated steel or thermally broken aluminum frames conforming to the above requirements. Finish shall be factory applied and conform to 44-C-22431 in accordance with the requirements of the National Association of Architectural Metal Manufacturers (NAAMM) Kitchen and patio doors shall be double French style with one side operable, double glazed and one side stationary, double glazed. Both sides shall have operable venetian blinds enclosed between glass panes

5-15.3 Glazing. Units shall be double glazed with low E-glass. The design shall consider the work involved in repair and replacement of individual panes and overall window groups.

5-15.4 Interior window stools shall be solid-wood, paint-grades with a minimum thickness of 3/4-inch.

5-16 Screens. Screens shall be provided at all operable sashes. Screens and frames shall be aluminum, of window manufacturer's standard design, and conform to AAMA 1002.10, Voluntary Specification for Aluminum Insulating Storm Products for Windows. Sunscreens (screen composed of more dense mesh screening material than standard insect screens) fit in the same screen track and continue to act as an effective insect screen and also as a Solar Heat Gain Coefficient (SHGC) reducer should be considered for installation in west- and east-facing windows, and in south-facing windows that do not have passive solar overhang shading. In hot climates solar heat gain through the windows is often responsible for 50% or more of the air conditioning load, and sunscreen is an effective, low-cost, passive and persistent means of reducing it.

5-17 Window Treatments. Provide 1 inch metal blinds at windows and glazed hung doors. Color shall be manufacturer's standard off white, and shall be coordinated with wall color. Shades are not permitted.

5-18 Doors. See Table 7-1 for thermal performance requirements for exterior doors.

5-18.1 Entrance doors. The housing unit primary entrance door shall be 3 ft in width by 6 ft - 8 inches in height by 1-3/4 inch thick, thermal metal. Other housing unit entrance doors should meet this requirement but may be

of lesser width. Equipment room entrance door shall be 3ft wide by 6ft-8inches in height by 1-3/4" thick, metal. Exterior door frames shall be painted hollow metal reinforced to accept door hardware.

5-18.2 Bulk storage doors. Exterior bulk storage doors shall be a minimum 1-3/8 inch thick, exterior grade, thermal metal, or hollow core metal.

5-18.3 Aluminum screen and storm doors: Screen and self-storing storm doors shall be provided for all housing unit exterior hinged doors. Frames shall be a minimum 1-1/4-inch thick and 2 inches wide. Aluminum alloy materials shall be not less than 0.05-inch thick and 2 inches wide. Doors shall have solid bottom panels and midsection protective grills. Screening materials shall be aluminum.

5-18.4 Interior doors. Interior doors shall be 6 ft -8 inches in height by 1-3/8 inch thick, hollow core wood or hollow panel. Wood doors will be painted. Door frames shall be paint grade solid wood construction. Pre-hung and pre-finished doors and frames may be used.

5-19 Builders Hardware. Hinges, locks, and latches will comply with the specifications indicated in Table 5-10, and the following subparagraphs:

**TABLE 5-10 – HARDWARE SPECIFICATIONS**

Hardware Type/ Specification	Specific Requirements
Hinges ANSI/BHMA A156.1	Hinges shall be 4 in x 4 in at exterior doors, and 3-1/2 in x 3-1/2 in at interior doors. Ball bearings shall be of a base material of brass or bronze except as noted for fire rated door.
Locks & Latches ANSI/BHMA A156.2	Series 4000, Grade 1, at exterior doors. Grade 2 at interior doors. Provide trim of wrought brass, aluminum, or stainless steel.
Auxiliary Locks ANSI/BHMA A156.5	Series 4000, Grade 1. Provide matching trim of wrought brass, aluminum, or stainless steel.
Interconnected Lock & Latches ANSI/BHMA A156.12	Grade 1. Provide matching trim of wrought brass, aluminum, or stainless steel.
Closers ANSI/BHMA A156.4	Series CO2000, Grade 1.

5-19.1 Locks and keys. Lock cylinders shall have six pin tumblers and interchangeable cores which are removable by a control key. Provide a master keying system. Locks for each housing unit, including exterior storage and garage door(s), shall be keyed alike. The Contractor shall provide one extra set of cores for each 25 housing units and furnish four keys for each key change and for master key system and control key. Locks and keys shall conform to the standards and requirements of the Builders Hardware Manufacturers Association ANSI/BHMA A156.2 listed above.

5-19.2 Weather-stripping and exterior thresholds: Provide nonferrous metal or vinyl weather-stripping for all housing unit exterior doors. Vinyl magnetic weather-stripping is acceptable for metal doors. Exterior thresholds shall be nonferrous metal.

5-19.3 Applications. Locks and hinges shall be applied as follows:

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5-19.3.1 Exterior hinged doors shall have 1-1/2 pair of hinges, lockset, and an auxiliary lock.

5-19.3.2 Each main entrance door will have a viewer mounted at eye level. Handicapped housing units shall have an additional viewer located for wheelchair height.

5-19.3.3 Bulk storage doors shall have 1-1/2 pair of hinges and lockset.

5-19.3.4 Interior doors shall have one pair of hinges and latch set with ANSI/BHMA A156.2, F75 OR F76 operations.

5-19.3.5 Doors in fire-rated walls, housing unit to garage, shall have 1-1/2 pair of steel ball-bearing hinges, lockset, auxiliary lock or interconnected lock and latch and closer.

5-19.3.6 Hardware Trim. Lock trim shall be cast, forged or heavy wrought construction of commercial plain design. In addition to meeting the test requirements of BHMA/ANSI A156.2 or 156.13, lever roses and escutcheons shall be a minimum of 0.05 inches thick. If reinforced, the outer shell shall be a minimum of 0.035 inches thick and the combined thickness shall be a minimum of 0.07 inches except the knob/lever shanks, which shall be a minimum of 0.06 inches thick.

5-19.3.7 Garage side exterior doors shall have 1-1/2 pair of hinges and lockset.

#### 5-20 Postal Service and Building Signage.

5-20.1 Postal Service. Each housing unit shall be provided with an individual mailbox, grouped and located in Neighborhood Delivery & Collection Box Units (NDCBUs) as manufactured by National Mailboxes (1-800-676-5161) or approved equal. Units shall be manufactured from heavy duty aluminum and stainless steel construction, providing protection against rust and with a hood to protect against most weather conditions. Door sizes shall be 5" H x 6" W. Also provide large package mailboxes (one for each 8-10 housing units). Provide within units a mail slot to receive outgoing mail. Units shall be rear loading and include pedestals.

5-20.2 Building Signage. All new units shall be provided with building identification signage in accordance with the Installation Design Guide requirements.

5-20.3 Housing numbers. Provide a five-digit number for each dwelling unit. Provide a minimum 4 inch high house identification numbers/ letters in Helvetica medium font colored black on an illuminated white background mounted on 12-gauge aluminum for each dwelling unit. The house identification shall be mounted near each entry. The government will assign housing numbers.

5-20.4 Occupant Identification Signage. Provide occupant identification signage similar to existing family housing signage. Signage shall be interchangeable and made of plastic with routed letters. Total sign height shall be 2 inch overall including the frame. Signs shall be mounted 5 feet above finish grade at side of entry. All signage should conform to the guidelines established by TRADOC sign standards (TRADOC Reg. 420-14). Names and rank shall be as directed by the government.

5-21 Kitchen Cabinets. Cabinets may be pre-fabricated and pre-finished or be factory manufactured of wood. Wall cabinets shall have adjustable shelves. Cabinets shall have magnetic catches except where spring-loaded self-closing hinges are provided. Cabinets shall include knobs/handles and or pulls and shall conform to ANSI A161.1, Recommended Performance and Construction Standards for Kitchen and Vanity Cabinets, except where modified below. Wall and base cabinets shall be essentially of the same construction and appearance. Provide cabinet drawer slide system that meets or exceeds ANSI A156.9, TYPE B05111. All cabinet shelf brackets to meet A156.9 TYPE B04073. Refer to Table 55 for minimum kitchen cabinet area requirements. Additional cabinet space may be achieved with tall wall cabinets.

5-21.1 Cabinets construction. Construct cabinets with frame fronts and solid ends, or of frame construction throughout. Frame members shall be mortised and tendoned, dove-tailed or doweled, and glued together. Brace the top and bottom corners with hardwood blocks that are glued with water-resistant glue and nailed in place. Cabinet interior plywood surfaces exposed to visibility and use, including drawer bottoms and cabinet sides, backs and bottoms shall be covered by non-stick plastic laminate finish. Wood cabinet materials and dimensions - Materials and minimum dimensions and thicknesses for cabinet construction materials shall comply with Table 5-11.

**TABLE 5-11 – KITCHEN CABINET SPECIFICATIONS**

Element Description	Specific Requirements
Frame Members	3/4 in x 1-1/2 in kiln-dried hardwood.
Base Cabinet Toe Space	2-1/2 in x 4 in high.
Cabinet Bottoms, Backs & Tops (Unexposed)	3/16 in hardwood plywood or 1/8 in tempered hardboard. Provide bottoms in kitchen sink cabinets. Brace bottoms with wood members glued in place.
Cabinet Ends & (Exposed Backs/Bottoms)	Hardwood plywood, 5 ply, good grade for natural finish. Base Cabinets: 1/2 in Wall Cabinets: 3/8 in
Doors	5/8 in hardwood plywood, good grade for natural finish, with hardwood trim. Raised panel or recessed panel.
Drawer Slides/Glides	20 gauge metal. Grade 2 ANSI/BHMA A156.9 TYPE B05111
Drawer Fronts	5/8 in solid hardwood, matching doors.
Drawer Bottoms	1/8 in softwood plywood, Grade A-B veneer or 1/8 in tempered hardboard. Bottoms 15 in wide shall be braced and glued in place.
Interior Partitions	1/2 in hardwood or softwood plywood, Grade A-A or comparable veneer.
Shelves	1/2 in softwood plywood (Grade A-B Veneer), hardwood plywood (good grade veneer), or glued-up solid wood. Support shelves on ends and on 24 in centers.  Shelf edges exposed to view shall be rounded, filled, sanded, and finished. Shelves and interior-surfaces of cabinets shall have non-stick plastic laminate finish.



5-21.2 Countertops. Countertops shall be ½" thick, pure acrylic polymer, non-porous, solid surface material with 2" turndown front face. Minimum backsplash height is 4 inches. The entire area behind the oven-range and range hood shall be protected with same material. Countertop and backsplash edges shall be beveled.

5-22 Appliances. Provide the following equipment in accordance with specifications listed, one each per housing unit. A listing of currently labeled Energy Star appliances is available through the internet at the EPA website: <http://www.energystar.gov/products/appliances.html>. All appliances shall be white in finish color.

5-22.1 Refrigerators. Comply with UL 250, Household Refrigerators and Freezers and shall bear the EPA "Energy Star" certified label. Provide refrigerator with frost proof top freezer, automatic defrosting, and ice maker with water filter. Refrigerator shall have two vegetable bottom baskets, at least four adjustable shelves, at least two shelves and egg container in door; freezer compartment shall contain separate interior shelves, multiple door shelves, and ice maker. Provide reversible (left swing and right swing interchangeable) doors. Refrigerators shall conform to the energy compliance standards of 10 CFR 430, including those refrigerators manufactured before the code took effect. The use of refrigerants with an Ozone Depletion Potential (ODP) of .05 or less is required. Minimum refrigerator volume shall be 21 cubic feet. Energy efficiency shall not exceed 722 kWh/yr.

5-22.2 Ranges and ovens. Ranges shall be 30 inches wide and provided with porcelain enamel cook top, oven, clock and timer, oven light, and cooking surface light. Oven shall have black glass window door, broiler pan, and self-lock racks.

5-22.2.1 Gas ranges shall have two, 6-inch and two, 8-inch burners, a self-cleaning oven, and AGA-approved electronic ignition. Provide utensil drawer in each range. Gas ranges shall be in accordance with AGA z21.1, American National Standard for Household Cooking Gas Appliances.

5-22.3 The kitchen in each unit shall have one tube-type solar skylight, minimum 10" diameter. Skylight shall be equal to that manufactured by Solatube, 2210 Oakridge Way, Vista, CA 90283-8341, and having the following salient features:

- a) high impact polycarbonate dome to block harmful UV rays, and be resistant to debris impacts from high winds
- b) interior tube surface to be 95% light reflective
- c) flexible tube design to bypass attic obstacles
- d) water, bug, and dust leak-proof seamless flashings
- e) minimal heat gain and loss
- f) 10-year warranty against breakage and yellowing.

5-22.4 Range hoods. Provide metal range hoods, the same length and finish as the range, with separately switched light and exhaust fan. The hood shall have a washable filter. The fan shall have a capacity of not less than 50 cubic ft per minute per linear foot of range hood. The sound level shall not exceed 6 sones. Duct the fan above the roof and provide back-draft protection. Each range hood shall be equipped with a fire-protection (extinguishing) system installed within the hood, and shall comply with NFPA 96. The use of battery operated suppression devices is not acceptable. The system installed shall be of re-usable thermal link type. The wet chemical agent shall conform to the requirements of National Fire Protection Association (NFPA) Standard No. 17A for Wet Chemical Fire Extinguishing Systems. The extinguisher cylinder and valve assembly shall be provided fully charged with chemical, and pressurized with dry nitrogen in accordance with Listed requirements. The pressure gauge attached to the valve assembly shall be positioned to allow visual inspection, where installed within the kitchen cabinet. Fire-extinguishing system shall be compatible with gas range provided, and shall provide an appliance shut-down U.L. Listed device to automatically shut-off the gas or electric supply to surface burners on the kitchen range top upon actuation of the fire extinguishing system. (If an electrical range is ever to be used in these kitchens, this fire-extinguishing system must be adjusted!) Provide with each system an audible alarm with minimum 85-dbA rating. Alarm shall be U.L. Listed or U.L. recognized component, supplied complete with back box ready for installation. Unit shall be Guardian I, Model # 1384A as manufactured by 21 Century fire

[www.21centuryfire.com](http://www.21centuryfire.com) (1-800-786-2178) or approved equal.

5-22.5 Garbage disposals. Garbage disposals shall conform to UL 430; Waste Disposers; continuous feed, minimum 3/4 HP motor, stainless steel grinding elements, two 360-degree stainless steel swivel impellers, manual motor reset, and sound insulation. A plug connector is required. Garbage disposal shall be InSinkErator model 555ss, Waste King Gourmet Series model SS3100, or approved equal.

5-22.6 Dishwashers. Dishwashers shall conform to UL 749, Household Electric Dishwashers, and be UL listed, electric type, with air gap, racks, lift-out utensil holder, spraying arms, and detergent dispenser. Unit shall be listed as "Energy Star" compliant and shall bear the "Energy Star" label. The automatic controls shall cycle through the Wash, Rinse, Dry / Heat, and Stop phases, and shall be capable of rinse and hold cycle as well as a no heat drying feature. The unit shall contain instantaneous, or in-line, water heater booster, with automatic thermostat set for 140 degrees F. Rated energy use for standard capacity models will not exceed 620 kWh/yr. The dishwasher shall have factory applied sound isolating and insulating features for a sound rating no greater than 5 sones

5-22.7 Water heater. See paragraph 8 - UNIT DESIGN- PLUMBING.

5-22.8 Ceiling Fans. Provide ceiling fans in all bedrooms and living spaces. See Chapter 9 Electrical, paragraph 9-7.2.3 for additional requirements.

5-22.9 Color. Kitchen appliances, except disposals, shall be of matching finish, white in color.

5-23 Maintainability. The design of housing units including the selection and specifying of exterior and interior finishes, equipment, appliances, and systems shall include consideration of maintenance ease and cost. Avoid products that require continuing maintenance at high cost. Avoid products with finishes that cannot sustain frequent and harsh scrubbing.

5-24 Fireplace and chimney. Fireplaces and chimneys are not to be used.

End of 01001-5.